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wedges applied between dogs in the usual way, and of course without wounding the joists. In order more completely to ascertain the comparative power of the two methods, bearers, ten feet apart, were placed on the side of a plank that had been nailed down; and on applying another plank, it was found to be kept an inch apart from the former by the interposition of the bearers. Mr. Smith's instrument was then made to act on the edge of the plank midway between the bearers, and forced that part in contact with the other plank. The dogs and wedges were then made trial of, but were not capable of exerting so strong a pressure as the lever cramp. Mr. Smart considers it to be a very powerful, useful, and commodious instrument.

No. XIV.

CARRIAGE FOR MR. PALMER'S RAILWAY.

The SILVER ISIS MEDAL and FIVE POUNDS were presented to Mr. T. CHAPMAN, 4, Royal Row, Lambeth, for his Carriage for Mr. PALMER'S Patent Railway; a Model of which has been placed in the Society's Repository.

SIR,

4, Royal Row, Lambeth, Feb. 11, 1828.

I BEG leave to offer to the Society for the Encouragement of Arts, a model of an improvement on Mr. Palmer's carriage and railway, by which the difficulty of turning an angle, and the loss of time necessary to accomplish

that object in Mr. Palmer's carriage, is entirely obviated. I shall be happy to attend the exhibition of the model, whenever you may think proper to bring the subject before the Committee.

I am, Sir, &c. &c.

A. AIKIN, *Esq.*

THOMAS CHAPMAN.

Secretary, &c. &c.

Mr. Palmer's railway is a single rail, elevated sufficiently above the ground to allow of two boxes being suspended, one on each side of the rail and near to it, from two wheels one behind the other on the rail, and, when making a turn, a portion of the rail turns with the carriage on it.

Mr. Chapman's contrivance is to make the carriage move from one angle on to another, or along a curved rail as well as a straight one.

Plate IX. Fig. 8, is an end view; fig. 9 a side view, partly in section; fig. 10 a top view, smaller; *a a*, the rail; *b b*, two wheels on the rail; these carry the turning-plates *c c*, each having four friction-rollers; *d d*, the carriage plates lying on the friction-rollers; *e e*, upper plates; *f f*, the vertical axis of the wheel frames or turn-plates *c c*; they pass through the plates *d* and *e*, from which the boxes *g g* are suspended by the lateral arms *h h* and *i i*. Now, as the wheels and frames *b c* can turn freely on their axis *f f*, they each require four guiding rollers *j j j j*, to keep them in a right line with the rail, and to cause them to turn as the rail turns. Fig. 10 shews the carriage on a curved portion of rail; these carriages should not be farther asunder than is absolutely necessary for the required

curve of the rail, it being a great advantage in Mr. Palmer's carriage that the boxes are so close to the rail, and so little top-heavy, that a considerable inequality of weight produces very little disturbance of the equilibrium. The bottom of the carriage has a joint at one-third of its length, and is held up at this by the hooks *k k*; by removing these, the contents may be let out: the fixed portion of bottom is made sloping, so that it may be readily emptied.

No. XV.

COCK FOR BOTTLING WINE.

The LARGE SILVER MEDAL was presented to Mr. J. CASTELL, 24, Dartmouth Street, for his Duplex Cock for Bottling Wine; a Model of which has been placed in the Society's Repository.

24, Dartmouth Street, Westminster,
6th March, 1828.

SIR,

I do myself the honour of sending, for the inspection of the Society of Arts, one of my duplex bottling cocks. I have now had ten years' practice in the bottling trade, and have discovered that the ordinary mode of operation is attended with not only a great loss of liquor and waste of time, but also with considerable manual labour. My chief study, in the construction of this cock, has been to obviate these difficulties, in which I have been successful. Having satisfied myself of its efficacy, the first person I